

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A laser scanning device adapted to scan an interface surface provided on a product item, the interface surface having disposed thereon or therein ~~coded data portions at a plurality of locations on the interface surface, each coded data portion containing coded data which includes, at a plurality of locations on the interface surface, a corresponding plurality of coded data portions, each coded data portion being indicative of an identity of the product item, an identity of the interface surface and the position of the coded data portion, the product item being provided in a sensing region, the scanning device including:~~

~~(a)~~—a laser for emitting at least one scanning beam, the scanning beam being directed in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch, the scanning patch being provided ~~in on the interface surface~~ sensing region such that it exposes at least one coded data portion;

~~(b)~~—a sensor for sensing the at least one exposed coded data portion; and

~~(c)~~—a processor for:

~~—determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item;~~

~~determining the identity of the interface surface;~~

~~determining position data representing a position of the sensed coded data portion on the interface surface;~~

~~determining a description of the interface surface using the determined identity;~~

~~and~~

~~identifying the at least one region from the description and the position data.~~

2. (Original) The scanning device of claim 1, wherein the coded data encodes an EPC associated with the product item, and wherein the processor determines the EPC.

3. (Original) The scanning device of claim 1, wherein the product identity data distinguishes the product item from every other product item.

4-5. (Canceled)

6. (Currently Amended) The scanning device of claim 4~~1~~, wherein the processor:

determines the product identity data of the product item during a scan event; and,
~~generates the scan data if~~determines whether the determined product identity data is
different to product identity data determined during previous scan events.

7. (Canceled)

8. (Original) The scanning device of claim 1, wherein the coded data is redundantly encoded.

9. (Original) The scanning device of claim 8, wherein the processor is adapted to use the redundantly encoded coded data to detect one or more errors in the coded data.

10. (Original) The scanning device of claim 9, wherein, in response to the detection of one or more errors, the scanning device performs at least one of:

- (a) correcting the one or more detected errors;
- (b) signaling a failed scan; and,
- (c) ignoring the coded data.

11. (Original) The scanning device of claim 8, wherein the coded data is redundantly encoded using Reed-Solomon encoding.

12. (Original) The scanning device of claim 1, wherein the coded data is indicative of a plurality of reference points.

13. (Original) The scanning device of claim 12, wherein each reference point corresponds to a respective location on the interface surface, and wherein the processor generates position data representing the position of a sensed reference point on the interface surface.

14-18. (Canceled)

19. (Currently Amended) The scanning device of claim 1 further including,
~~wherein the scanning device includes~~ at least one deflector for deflecting the scanning beam
~~in first and second orthogonal directions to thereby generate a raster scan pattern over a~~
~~scanning patch.~~

20. (Original) The scanning device of claim 19, wherein the at least one deflector
includes at least one of:

a rotating holographic element;
first and second acousto-optic deflectors; and,
resonant scanning mirrors.

21. (Currently Amended) The scanning device of claim 20 further including,
~~wherein the scanning device includes~~ an amplitude modulator, positioned between the laser
and the at least one deflector, for modulating the amplitude of the scanning beam.

22. (Original) The scanning device of claim 21, wherein the scanning device:
determines from radiation sensed by the sensor, using the modulation of the
scanning beam, ambient light incident on the sensor;
determines from radiation sensed by the sensor, using the determined ambient light
incident on the sensor, the radiation reflected from the interface surface; and,
senses the coded data from the radiation reflected from the interface surface.

23. (Currently Amended) The scanning device of claim 21 further including,
~~wherein the scanning device includes~~ a focussing element positioned between the amplitude
modulator and the at least one deflector for focussing the beam.

24. (Canceled)

25. (Currently Amended) The scanning device of claim 19 further including, ~~the~~
~~scanning device including~~ at least one beam controller for selectively providing the
scanning patch at one of a number of positions in the sensing region.

26-28. (Canceled)

29. (Currently Amended) The scanning device of claim 24~~25~~²⁵, wherein the beam controller comprises:

a first mirror;

a plurality of second mirrors; and,

a controller which controls the position of the first mirror to thereby reflect the scanning beam from a selected one of the second mirrors into the sensing region.

30. (Original) The scanning device of claim 29, wherein each second mirror defines at least one patch beam path, and wherein the controller controls the position of the first mirror to thereby direct the scanning beam along a selected patch beam path.

31-33. (Canceled)

34. (Original) The scanning device of claim 1, the coded data being disposed on or in a substrate in accordance with at least one layout, the layout having at least order n rotational symmetry, where n is at least two, the layout including n identical sub-layouts rotated $1/n$ revolutions apart about a centre of rotational symmetry of the layout, the coded data disposed in accordance with each sub-layout including rotation-indicating data that distinguishes the rotation of that sub-layout from the rotation of at least one other sub-layout within the layout.

35. (Original) The coded data of claim 34, wherein the rotation-indicating data of each sub-layout is adapted to distinguish the rotation of the sub-layout from the rotation of each other sub-layout.

36. (Original) The scanning device of claim 34, wherein each coded data portion has a plurality of codewords arranged in accordance with a respective layout, the plurality of codewords being indicative of the identity of the product item.

37. (Original) The scanning device of claim 36, wherein each sub-layout has at least one codeword that is different to the codeword of each other sub-layout.

38. (Original) The scanning device of claim 36, wherein each layout has at least one codeword that is different to at least one codeword of at least one other layout.

39. (Original) The scanning device of claim 36, wherein each layout has at least one codeword that is identical to at least one codeword of at least one other layout.

40. (Original) The scanning device of claim 36, wherein each codeword is formed from a number of data elements arranged in accordance with a respective sub-layout.

41. (Original) The scanning device of claim 40, wherein the data elements are arranged such that each data element has a unique position.

42. (Original) The scanning device of claim 41, wherein the positions of the data elements of respective sub-layouts are interleaved.

43. (Original) The scanning device of claim 1, the coded data being disposed on or in a substrate in accordance with at least one layout, the layout having at least order n rotational symmetry, where n is at least two, the layout encoding orientation-indicating data comprising a sequence of an integer multiple m of n symbols, where m is one or more, each encoded symbol being distributed at n locations about a centre of rotational symmetry of the layout such that decoding the symbols at each of the n orientations of the layout produces n representations of the orientation-indicating data, each representation comprising a different cyclic shift of the orientation-indicating data and being indicative of the degree of rotation of the layout.

44. (Original) The scanning device of claim 43, wherein each coded data portion has a plurality of codewords arranged in accordance with a respective layout, the plurality of codewords being indicative of the identity of the product item.

45. (Original) The scanning device of claim 44, wherein the coded data includes a plurality of layouts of two or more layout types, each layout encoding its layout type

46. (Original) The scanning device of claim 45, wherein each layout encodes a distributed codeword wherein fragments of the distributed codeword are distributed between

the two or more layout types in a predetermined manner such that the distributed codeword can be reconstructed from fragments located in a plurality of adjacent layouts of different types

47. (Original) The scanning device of claim 1, wherein the coded data is printed on the interface surface in infrared ink, and the scanning beam is an infrared scanning beam.

48. (Canceled)

49. (Original) The scanning device of claim 1, wherein the scanning device further includes a memory for storing the product identity.

50. (Original) The scanning device of claim 1, wherein the scanning device is provided in a shopping receptacle, the shopping receptacle being adapted to receive and retain a product item, and wherein the scanning device senses at least some of the coded data on the interface surface of the product item when the product item is at least one of:

- (a) removed from the receptacle; and,
- (b) placed in the receptacle.

51. (Canceled)

52. (Original) The scanning device of claim 50, wherein the receptacle is at least one of:

- (a) a shopping trolley;
- (b) a shopping cart; and,
- (c) a shopping basket.

53-75. (Canceled)